



A.D. 1791 N° 1798.

S P E C I F I C A T I O N

OF

BENJAMIN CHARLES COLLINS.

FIRE GRATES.

L O N D O N :

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY :

PUBLISHED AT THE QUEEN'S PRINTING OFFICE, EAST HARDING STREET,
NEAR FLEET STREET.

Price 3d.

1854.



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COLLINS' SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, BENJAMIN CHARLES COLLINS, of the City of Salisbury, in the County of Wilts, send greeting.

WHEREAS His most Excellent Majesty King George the Third, did, by
5 His Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Eighteenth day of March, in the thirty-first year of his reign, give and grant unto me, the said Benjamin Charles Collins, my executors, administrators, and assigns, His especial licence, full power, sole privilege and authority, that I, the said Benjamin Charles Collins, during the term of
10 years therein expressed, should and lawfully might make, use, exercise, and vend, within that part of the Kingdom of Great Britain called England, the Dominion of Wales, and Town of Berwick upon Tweed, my Invention of a
“A NEW CONSTRUCTION OF A GRATE TO BE USED IN OR OUT OF A CHIMNEY,” in which said Letters Patent there is contained a proviso obliging me, the said
15 Benjamin Charles Collins, under my hand and seal, to describe and ascertain the nature of my said Invention, and in what manner the same is to be performed, by an instrument in writing under my hand and seal, and cause the same to be inrolled in His Majesty's High Court of Chancery, within one calendar month next and immediately after the date of the said recited Letters
20 Patent, as in and by the same, relation being thereunto had, may more fully and at large appear.

NOW KNOW YE, that in pursuance of and compliance with the said proviso, I, the said Benjamin Charles Collins, do hereby declare that the nature of my said Invention, and the manner in which the same is to be performed,
25 is herein-after described and set forth, that is to say:—

Collins' New Construction of a Grate to be used in or out of a Chimney.

The said Invention is calculated to encrease the action of air upon fire by augmenting and inverting its passage through the same, whereby is combined in an extream degree the nitre of atmospheric air with the sulphur of fuel, for it is understood that nitre and sulphur produce the strongest fire known, and that when the Invention is applied so that no air shall pass but through the fire the strength thereof is augmented, so that it shews a perfect white heat; and as the draught of air is necessarily very great, all or nearly all of the unignited smoke is carried down into the fire and there consumed, instead of passing off, as it would do in a common way; thus, I convert the smoke into fire, and am also enabled to produce a fine clear fire from such refuse 10 fuel as other open fire grates will burn with difficulty only. The principles which I claim an exclusive right of under the Patent are these, of an air flue or air flues, and a stop or stops, whereby I at pleasure encrease the draught of air in that degree which I may require for a strong bright fire, or indeed any degree of fire exceeding the strength of common fires; these flues 15 may be made of any size or shape, upright, inclining, circular, or in any other mode, so that the passage of air be not improperly impeded thereby; they may also be made, of any metal, or of stone, brick, or of any other production of nature or art, so that the same does not burn or consume; and they may be affixed to the grated part of the grate or repository for ignited matter, as they 20 may be made in any chimney or other place serving for the purpose of a chimney for burning of fuel; the stops are applied to increase and to regulate the draught of air in whatever manner such increase or regulation may be required, and may be made of any metal, stone, earth, or any other applicable production of nature or art, and grates completed with these flues and stops are 25 perfectly applicable to the various uses of all sorts of rooms and places where fire is required in dwelling-houses and other places or houses, and may be made of any size or shape at the pleasure and discretion of the person wanting them; they are no less applicable to lighthouses and other places requiring a strong light, also for laboratories, brew-houses, smelting furnaces, glass- 30 houses, vinegar makers, and all and every persons requiring such fire as may be hereby produced, and as the application of the said flue or flues and stop or stops is most easy to every sort of grate when their principles are known, I therefore proceed to the description how the same may be applied for the use of rooms in dwelling houses, and it is thus:—I suppose that there is a room 35 having a fire-place three feet wide and four feet high, and twenty inches in depth, from the front to the back; for this fire-place, I order a workman to make what is denominated a grate front, being the same size in width and heighth as the fire-place, leaving a proper space in the middle of the front for

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the insertion of a receptacle of fuel intended to be burned therein, the same receptacle as in common use and generally known by the name of the grateing or grated part; this space I suppose to be twenty inches wide and three feet four inches high, so that the left and right hand sides of the said front are eight
5 inches wide, the top part of the said front is also eight inches wide crossways; to the inside inner edges of the left and right hand sides of the said front I fix a flat cheek, that is, a flat cheek to each side front; this cheek may be about half an inch thick, or more or less, and solid, excepting in those parts where the air is to draw away after passing through the fire, and those parts
10 must be open according to the degree of draught wanted, and it is best that they should be open from the hearth to within about three inches of the bottom of the grating or receptacle holding the fire, as thereby the atmospheric air must then descend through the burning fuel to ascend the flues; these cheeks being fixed, I next fix two other cheeks within half an inch of the
15 inner outside edges of the aforesaid side fronts; the second cheeks should be solid and about half an inch thick, more or less, and should be carried up within an inch to the top of the said fronts; this done, I put a strong back, made as other grate backs are, and of any materials preferred, extending in heighth from the hearth to the top of the cheeks, and in width so as to receive
20 and connect or become as a strong back to both pair of cheeks above mentioned; this done, I drill a hole in each left and right handed front, which are now become the fronts of flues according to the principle of my Invention. I also drill other holes in the back opposite to the hole in each front, whereby I may insert in each front a spindle or rod, shewing a small handle or screw on the
25 outside for turning the same; after this I affix to each spindle a thin plate, as an apt regulating stop to the inside of each flue, so that either or both may be occasionally applied to the intent of regulating or stopping the draught of air passing up the same, or if preferred, I apply an apt valve to each flue, regulating the same by a leaver or screw; this done, I insert the grating or recep-
30 tacle, which, being of the same kind as in general use, I do not describe; this grating being fixed at the usual distance from the hearth, I learn what space remains open before the ash-pit; this space I close up either by a stop plate, by sliding doors, or by any other mode preferred, for by such closing up the common air is prevented passing up the said flues when a strong fire is wanted,
35 but this stop plate, sliding doors, or other mode preferred should be so applied as to move easily and altogether or in part, for thereby the strength of the fire will be the better regulated. Further, I apply, when preferred, a laying door or flat plate after the manner of a common register, with a leaver or screw to raise or depress the same at pleasure; further, where hearths are decayed or

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laid upon timber, I apply a plate of metal or a stone, covering the whole space for greater safety. Grates having these flues and stops may be made to burn fuel out of a chimney in an equal degree as in one, by affixing to the tops of them a canopy of metal or other production of art or nature to the height of six feet, or more or less, with an aperture at the top of the said canopy suitable to the discharge of the draught passing off from the flues and fire. 5

In witness whereof, I, the said Benjamin Charles Collins, have hereunto set my hand and seal, this Sixteenth day of April, in the thirty-first year of the reign of our Sovereign Lord George the Third, by the grace of God of Great Britain, France, and Ireland, King, Defender of the Faith, and so forth, and in the year of our Lord One thousand seven hundred and ninety-one. 10

BENJAMIN CHARLES (L.S.) COLLINS.

Sealed and delivered by the within-named Benjamin Charles Collins (being first duly stamp'd) in the presence of

JON^N DENNETT, }
WILLIAM GREAVES, } Covent Garden.

AND BE IT REMEMBERED, that on the same Sixteenth day of April, in the year above mentioned, the aforesaid Benjamin Charles Collins came before our Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all everything therein contained, in form above written. And also the Specification aforesaid was stamped according to the tenor of the Statute in that case made and provided. 25

Inrolled the same Sixteenth day of April, in the year above mentioned.

LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1854.